JOURNAL OF SCIENTIFIC COMPUTING

Volume 4, Number 1 March 1989

CONTENTS

Chebyshev Pseudospectral Method of Viscous Flows with Corner Singularities 1
W. W. Schultz, N. Y. Lee, and J. P. Boyd

Polynomial Approximation of Functions of Matrices and Applications 25
Hillel Tal-Ezer

A Four-Color Parallel Algorithm for the Solution of a Two-Dimensional Advection–Diffusion Equation with the Finite Element Method 61
Sauro Succi and Maurizio Benassi

Spectral Methods for the Computation of Discontinuous Solutions 71
Nira Gruberger

Characteristic Lines for Two- and Three-Dimensional Flows 119
Frederic Bisshopp

JOURNAL OF SCIENTIFIC COMPUTING

Volume 4, Number 2 June 1989

CONTENTS

Renormalization Group Formulation of Large-Eddy Simulations 139
A. Yakhot, S. A. Orszag, V. Yakot, and M. Israeli

Boundary Modifications of the Dissipation Operators for the Three-Dimensional Euler Equations 159
Pelle Olsson and S. Lennart Johnson

Resolution Requirements for Numerical Simulations of Transition 197
Thomas A. Zang, Steven E. Krist, and M. Yousuff Hussaini

Numerical Simulation of High Rayleigh Number Convection 219
S. Balachandar, M. R. Maxey, and L. Sirovich

JOURNAL OF SCIENTIFIC COMPUTING

Volume 4, Number 3 September 1989

CONTENTS

Generalized Vortex Methods for Free Surface Flow Problems. II: Radiating Waves 237
Gregory R. Baker, Daniel I. Meiron, and Steven A. Orszag

Compact Finite Volume Methods for the Diffusion Equation 261
Milton E. Rose

Efficient Removal of Boundary-Divergence Errors in Time-Splitting Methods 291
A. G. Tomboulides, M. Israeli, and G. E. Karniadakis

JOURNAL OF SCIENTIFIC COMPUTING

Volume 4, Number 4 December 1989

CONTENTS

Parallel Pseudospectral Domain Decomposition Techniques 309
David Gottlieb and Richard S. Hirsh

A Method for Exponential Propagation of Large Systems of Stiff Nonlinear Differential Equations 327
Richard A. Friesner, Laurette S. Tuckerman, Bright C. Dornblaser, and Thomas V. Russo

Intermediate Asymptotics and Renormalization Group Theory 355
Nigel Goldenfeld, O. Martin, and Y. Oono